

BIBLIOGRAPHICAL NOTES.—I.

BY SAMUEL HENSHAW.

BIOLOGIA CENTRALI-AMERICANA.—DIP-
TERA. Vol. I. By Charles Robert von Osten
Sacken.

	gen.	sp.
Cecidomyiidae, 1886, pt. 49, p. 1.	1	1
Mycetophilidae, 1886, pt. 49, p. 1-2.	3	6
Bibionidae, 1886, pt. 49, p. 2-5.	3	22
Simulidae, 1886, pt. 49, p. 5.	1	3
Blepharoceridae, 1886, pt. 49, p. 5.	1	1
Culicidae, 1886, pt. 49, p. 5-6.	2	5
Tipulidae, 1886, pt. 49, p. 6-20.	12	38
Rhyphidae, 1886, pt. 49, p. 20-22.	1	1
Stratiomyidae, 1886, pt. 49-50, p. 22-43.	27	92
Tabanidae, 1886, pt. 50-51, p. 43-60.	8	74
Chironomyzidae, 1886, pt. 51, p. 60.	1	1
Leptidae, 1886, pt. 51, p. 60-62.	3	13
Xylophagidae, 1886, pt. 51, p. 62-63.	1	2
Acanthomeridae, 1886, pt. 51, p. 63-68.	2	3
Midaidae, 1886, pt. 51-52, p. 68-73.	2	17
Nemestrinidae, 1886, pt. 52, p. 73-74.	2	3
Bombyliidae, 1886-87, pt. 52-55, p. 75-162.	24	107
Therevidae, 1887, pt. 55, p. 162-163.	2	7
Cyrtidae, 1887, pt. 55, p. 163-167.	6	8
Asilidae, 1887, pt. 55-57, p. 167-213.	39	167
Dolichopodidae, 1887, pt. 57, p. 213-214.	4	12
Empididae, 1887, pt. 57, p. 214-216.	2	10

The above enumeration of 147 genera and 593 species includes, in addition to those contained in the descriptive part of the work, all previously recorded from Mexico and Central America.

Species of the following genera are figured:—

Tipulidae.—Epiphragma, 1. *Tany-
prema, 1.

Stratiomyidae.—Hermetia, 1.

Tabanidae.—Chrysops, 1. Tabanus, 1.

Acanthomeridae.—Acanthomera, 3.

Bombyliidae.—Anthrax, 2, 3. Aphoeban-
tus, 3. Argyramoeba, 2. Eclimus, 3. Exo-

prosopa, 1. Hyperalonia, 1, 2. *Isopenthes,
2. *Lepidanthrax, 2. Pantarbes, 3. *Stonyx,
2.

Cyrtidae.—Ocnaea, 3.

Asilidae.—*Cophura, 3. Diogmites, 3.
Laphria, 3. Lastaurus, 3. Mallophora, 3.
Proctacanthus, 3.

The three plates contain 66 figures of 50 species; new genera are marked (*); the figure following the name of the genus denotes the number of the plate.

CLOUDS OF INSECTS.

On the night of Aug. 27th, Hornellsville, N. Y., was visited by a vast shoal of insects which came from the south, and, as long as observed, moved in a northerly direction. They made their appearance about sunset and on the following morning they had entirely disappeared. They were minute in size, possessed four membranous, glossy wings, and the abdomen was separated from the thorax by a narrow constriction. They probably belonged to the same order as the bees and wasps. The afternoon preceding the evening of their appearance was sultry and oppressive, and the sky was unclouded. Just before dusk a vast mound-like cloud became visible south of the city. It had an apparent altitude of about two thousand feet and was of the cumulus type. It shone with a rosy, semi-metallic lustre due to reflections from the western sky. A few minutes later the insects began to come from the direction of the cloud. It would be impossible to estimate their numbers. Probably there were at least hundreds of millions. There were places where they flew as thick as hail, and like hail in a common direction. When they had fully arrived the electric lights became the chief centres of their activity. They swarmed the stores and flew about the lights until exhausted, when they fell to the floors in such numbers that they were swept up by the merchants.

Hornellsville is situated in a valley extend-
ing approximately north and south. Now

one remarkable fact about this occurrence was that these insects occupied a limited belt in the centre of the valley, and did not extend to the elevated portions of the town on either side. There were no insects about the electric lights on the hillsides, and farther down in the valley the lights were frequented only by Lepidoptera. Where the small insects were most abundant the Lepidoptera were wanting. Probably the small insects drove them away. Looking from the hillsides a cloudy phosphorescence was seen to extend over the city in an irregular sheet, with here and there patches and protuberances rising high above the common mass. Comparing the position of this cloud at different times from seven until ten o'clock, it was evident that the centres of maximum density were moving northward, i. e., in the same direction that the insects moved in the early part of the evening. There was no perceptible moisture in the air so that this cloud could not be attributed to mist. It must have been caused by the reflection of the city lights upon the glossy wings of these insects.

Prof. D. A. Saunders tells me that a very similar cloud passed over Alfred Centre, a village about twelve miles southwest of Hornellsville, on the evening of August 16. The insects in this case were flying ants with deciduous wings, so that, after the cloud had passed, their wings were found very abundantly scattered over the ground. This cloud made its appearance about sunset and had passed over by dark. It came from a steep hill overlooking the town and swept across the town in a narrow belt, leaving the upper and lower parts unmolested. He has observed other clouds during the year in Florida, and says the inhabitants there are quite familiar with them. A rather remarkable cloud of this kind was particularly observed by him in the month of May at Sisco, Fla. The insects on this occasion were large, and had very glossy wings. The cloud began about eight o'clock in the morning and lasted

for half an hour. They seemed to rise from a flat meadow densely overgrown with grass. They ascended to an altitude of about twenty feet, and continued the rest of their course in a horizontal direction. The cloud seems to have been confined chiefly to a twenty-acre lot and did not pass to adjacent parts. It was a warm, bright day, and the reflection of light upon their wings gave the cloud a striking resemblance to a snowstorm. Their wings were deciduous, and neighboring pools were pretty much covered with them.

J. LAWTON WILLIAMS.

NOTES.—The Royal Society of New South Wales offers a prize of the Society's medal and £25 for the best essay containing the results of original research on the injuries occasioned by insect pests upon introduced trees, the essay to be sent in before May 1, 1893. The competition is in no way confined to residents in Australia, but is open without restriction to all.

In Nature Notes for August Mr. R. T. Lewis, on the authority of a correspondent in whose trustworthiness he has entire confidence, gives a curious account of the appreciation with which the song of the Cicada is heard by insects other than those of its own genus. The correspondent has frequently observed in Natal that when the Cicada is singing at its loudest, in the hottest portion of the day, it is attended by a number of other insects with lovely, gauze-like, iridescent wings, whose demeanour has left no doubt on his mind that the music is the attraction. The Cicada, when singing, usually stations itself upon the trunk of a tree with its head uppermost, and the insects in question, to the number sometimes of fifteen or sixteen, form themselves into a rough semi-circle at a short distance around its head. During a performance one of the insects was observed occasionally to approach the Cicada and to touch it upon its front leg or antennae, which proceeding was resented by a vigorous stroke of the foot by the Cicada, without,